NSD Pre-College Educational Activities

Howard S. Matis, Chairman NSD Educational Committee

The Nuclear Science Division has established an active education outreach program which has developed several strategies to introduce nuclear physics into the high school and middle school classroom. Our goals are to prepare educational literature that teachers can introduce into their curriculum and have experimental equipment that they can borrow.

To disseminate this material, we have developed a teaching center in cooperation with Oakland Public School's Chabot Science Center. Using a modest grant (the Meggers Award) from the American Institute of Physics, sufficient equipment was purchased to provide classroom hands-on activities centered on the general topic of "*The ABCs of Radioactivity*." This unit covers general properties of radioactivity and common radioactive materials found in the home and environment. Division scientists have given several workshops at Chabot Science Center for teachers. After attending the workshop, teachers have the opportunity to borrow the detectors for classroom use.

A teacher working with several members of the Nuclear Science Division created a laboratory manual that describes several experiments and activities on radioactivity. These experiments can be done with either equipment borrowed from the Chabot Science Center or from items bought from a science supply house. We have been distributing this manual to teachers. Last summer, we put these experiments on our educational web site.

To continue our work on the ABC's of Radioactivity, we have created a low cost cosmic ray detector that has been used in several schools and a 25 minute video on Cosmic Rays and Radiation. We have recently received another Meggers Foundation grant to add this equipment to the Chabot Science Center.

Another educational activity for the Division in the past few years has been participation in the annual California Chemathon which is attended by more than 2000 high school students. During the Chemathon, NSD scientists provide several "hands-on" demonstrations of nuclear science research. More than 400 students visit this popular station; it provides students from many diverse backgrounds an opportunity to talk to "real scientists" and see what they do. In 1995, we presented many of our demonstrations at the LBL Open House.

The major activity of 1996 has been the creation of a "Nuclear Science Wall Chart." This chart will illustrate the basics of Nuclear Physics coupled with the most exciting research that is being done in the world. We intend to make this chart widely available to schools. In August of 1996, we joined the organization called Contemporary Physics Education Project (CPEP). CPEP is the creator of the popular Particle Physics Wall chart and the recently produced Fusion chart. NSD is working with scientists and teachers from throughout the nation to produce this chart.

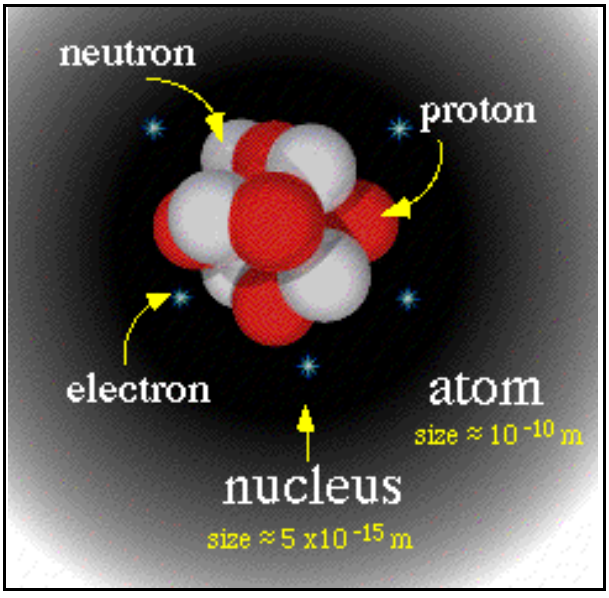

Fig. 1. One of the graphics that can be found in the Nuclear Science Educational Web site -- http://user88.lbl.gov/NSD_docs/ed.html.